

ABSTRACT

A method and apparatus for determining a direction or parallelism of a beam. The beam can be any type of beam, including uncharged or charged particle beams or electromagnetic radiation beams. The beam can have any desired size or shape and can be

5 scanned or fixed in place. A direction or parallelism of the beam can be determined by adjusting an intensity profile of at least a portion of the beam at a first position. The adjusted intensity profile can be formed, for example, by blocking a portion of the beam at the first position. The adjusted intensity profile can be formed by a special purpose device, such as a mask, adjustable aperture, etc., or by another device having a separate purpose.

10 For example, a beam modifier used to form the adjusted intensity profile can be a detector used to determine a measure of uniformity of the beam. One or more detected intensity profiles downstream of the first position can be identified and the relative positions of where the adjusted intensity profile is formed and where the intensity profile(s) are detected relative to a reference direction can be used to determine a direction or parallelism of the
15 beam.

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